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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

FORDE, REMMON R

ART UNIT PAPER NUMBER

2826

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/880,204

Applicant(s)

CAMRAS ET AL.

Examiner

Remmon R. Fordé

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 31 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-44 and 63-76 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 and 63-76 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 21.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The amendment submitted in correspondence dated 3/31/03 has been entered. However, the amendment to claim 53 was not entered due to the fact that the Examiner had previously cancelled non-elected claims 51-54 in his correspondence dated 12/30/02 (i.e. Paper No. 20). If the Applicant wishes to resubmit claims 51-54 for consideration then they will have to resubmit claims 51-54 renumbered as new claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-25, 31-39 and 63-71 are rejected under 35 U.S.C. 102(e) as being anticipated by Okazaki et al..

Regarding claims 1-15, 19, 21, 23, 31-33, 36, 37 and 63-69, referencing Figures 9 and 10, Okazaki et al. discloses a light emitting device having a stack of layers (1,2,3 & 4) including semiconductor layers comprising an active region (3,InGaN), the device

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further provided with a transparent optical element (20/22) bonded to the stack by a bond at an interface disposed between the optical element and the stack, wherein the bond is substantially free of organic-based adhesives. Okazaki et al. further discloses contacts (5 & 6) electrically coupled to the semiconductor layers to apply a voltage across the active region. Lastly, regarding the transparent bonding layer, the device of Okazaki et al. inherently has a bonding layer between the semiconductor layers and the transparent optical element (20/22) even though one is not explicitly shown or addressed. (Column 10, line 11 – Column 12, line 7.)

Regarding claims 16-18, 34 and 35, referencing Figures 9 and 10, Okazaki et al. further discloses that a refractive index of the optical element is greater than or equal to a refractive index of the semiconductor layers for light emitted by the active region. (Column 10, lines 38-61.)

Regarding claims 20 and 22, referencing Figure 10, Okazaki et al. further discloses providing at least one layer (6) highly reflective for light emitted by the active region located to reflect the light toward the optical element. (Column 10, line 11 – Column 12, line 7.)

Regarding claims 24, 25, 38, 39, 70 and 71, referencing Figure 9, Okazaki et al. further discloses providing a transparent superstrate layer (13) disposed above the semiconductor layers and directly bonded to the optical element, wherein the superstrate layer has a refractive index for light emitted by the active region greater than about 1.8. (Column 9, lines 22-32 & Column 10, lines 38-61.)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 26-30, 40-44 and 72-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okazaki et al..

Regarding claims 26-30, 40-44 and 72-76, Okazaki et al. teaches all the claimed invention except for the exact composition of the superstrate layer. Although Okazaki et al. does not teach the exact composition of the superstrate layer as that claimed by Applicant, the compositional differences are considered obvious design choices and are not patentable unless unobvious or unexpected results are obtained from these changes. It appears that these changes produce no functional differences since Okazaki et al. was aware of the importance of using various compositions for the superstrate layer that would allow the refractive index of the superstrate layer to either match or exceed the refractive index of the semiconductor layers to increase the light emitting efficiency of the led device and therefore using various material compositions would have been an obvious design choice (Column 9, lines 22-32 & Column 10, lines 38-61). Note *In re Leshin*, 125 USPQ 416.

Relevant Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ming-Jiunn et al. discloses a LED made with layers of III-Phosphide material.

Bojarczuk, Jr. et al. and Fairbanks et al. each disclose semiconductor devices provided with optical elements.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Remmon R. Fordé whose telephone number is (703) 305-4533. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on (703) 308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-5841 for regular communications and (703) 308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Remmon R. Fordé
May 30, 2003